

## PATENT COOPERATION TREATY

## PCT

## INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference <b>15656-5PCT</b>	<b>FOR FURTHER ACTION</b> see Form PCT/ISA/220 as well as, where applicable, item 5 below.	
International application No. <b>PCT/CA2004/000011</b>	International filing date (day/month/year) <b>05/01/2004</b>	(Earliest) Priority Date (day/month/year) <b>06/01/2003</b>
Applicant <b>TRANSFERT PLUS</b>		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 8 sheets.

☐ It is also accompanied by a copy of each prior art document cited in this report.

**1. Basis of the report**

- a. With regard to the language, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ The international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

- b. ☒ With regard to any nucleotide and/or amino acid sequence disclosed in the international application, see Box No. I.

2. ☐ Certain claims were found unsearchable (See Box II).

3. ☒ Unity of invention is lacking (see Box III).

**4. With regard to the title,**

☐ the text is approved as submitted by the applicant.

☒ the text has been established by this Authority to read as follows:

**APROTEININ AND ANALOGS AS CARRIERS ACROSS THE BLOOD-BRAIN BARRIER**

**5. With regard to the abstract,**

☒ the text is approved as submitted by the applicant.

☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

**6. With regards to the drawings,**

- a. the figure of the drawings to be published with the abstract is Figure No. 18

☐ as suggested by the applicant.

☒ as selected by this Authority, because the applicant failed to suggest a figure.

☐ as selected by this Authority, because this figure better characterizes the invention.

- b. ☐ none of the figures is to be published with the abstract.

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Box No. 1 Nucleotide and/or amino acid sequence(s) (Continuation of item 1.b of the first sheet)

1. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, the international search was carried out on the basis of:

a. type of material

☒

a sequence listing

☐

table(s) related to the sequence listing

b. format of material

☒

in written format

☒

in computer readable form

c. time of filing/furnishing

☒

contained in the international application as filed

☒

filed together with the international application in computer readable form

☐

furnished subsequently to this Authority for the purpose of search

2. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

3. Additional comments:

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## Box II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:  
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:  
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. ☐ Claims Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

## Box III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:  
1-4, 7-21, 24-38, 41-53, 56-67, 70-78, 80-102 (all partially), 5, 22, 39  
54, 68

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 5, 22, 39, 54, 68 complete; 1-4, 7-21, 24-38, 41-53, 56-67, 70-78, 80-102 partially

Carrier for transporting an agent attached thereto across the blood brain barrier wherein the agent is anticancer agent paclitaxel. Conjugate comprising the carrier and paclitaxel, pharmaceutical composition and use of the same for neurological disease (brain tumour, brain metastasis, schizophrenia, epilepsy, Alzheimer's disease, Parkinson's disease, Huntington's disease, stroke and obesity).

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2. claims: 1-4, 6-21, 23-38, 40-53, 55-67, 69-79, 80-102 partially

Carrier for transporting an agent attached thereto across the blood brain barrier wherein the agent is a green fluorescent protein, a histag protein, and beta galactosidase. Conjugate comprising the carrier and the protein agent, pharmaceutical composition and use of the same for neurological disease (brain tumour, brain metastasis, schizophrenia, epilepsy, Alzheimer's disease, Parkinson's disease, Huntington's disease, stroke and obesity)

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3. claims: 1-4, 6-21, 23-38, 40-53, 55-67, 69-79, 80-102 partially

Carrier for transporting an agent attached thereto across the blood brain barrier wherein the agent is a green fluorescent protein, a histag protein, and beta galactosidase. Conjugate comprising the carrier and the protein agent, pharmaceutical composition and use of the same for neurological disease (brain tumour, brain metastasis, schizophrenia, epilepsy, Alzheimer's disease, Parkinson's disease, Huntington's disease, stroke and obesity)

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## INT. NATIONAL SEARCH REPORT

International Application No

PCT/CA2004/000011.

## A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 A61K47/48 A61P25/00

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 A61K

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ, BIOSIS, CHEM ABS Data, EMBASE, MEDLINE

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	DE 199 53 696 A (CHERKASKY ALEXANDER) 10 May 2001 (2001-05-10)  column 1, lines 15-32; claim 3; figure 1 ----- -/--	1-4, 7-21, 24-38, 41-53, 56-67, 70-78, 80-102

☒ Further documents are listed in the continuation of box C.☒ Patent family members are listed in annex.

\* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&amp;" document member of the same patent family

Date of the actual completion of the international search

19 May 2004

Date of mailing of the international search report

30. 09. 2004

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2  
NL - 2280 HV Rijswijk  
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,  
Fax: (+31-70) 340-3016

Authorized officer

Gonzalez Ramon, N

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International Application No

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	<p>SHIMURA T ET AL: "TRANSPORT MECHANISM OF A NEW BEHAVIORALLY HIGHLY POTENT ADRENOCORTICOTROPIC HORMONE (ACTH) ANALOG, EBIRATIDE, THROUGH THE BLOOD-BRAIN BARRIER"</p> <p>JOURNAL OF PHARMACOLOGY AND EXPERIMENTAL THERAPEUTICS, AMERICAN SOCIETY FOR PHARMACOLOGY AND, US, vol. 258, no. 2, 1991, pages 459-465, XP008030272</p> <p>ISSN: 0022-3565</p> <p>abstract; figure 1</p>	<p>1,2,4, 7-19,21, 24-36, 38, 41-51, 53, 56-65, 67, 70-77, 80-102</p>
Y	<p>-----</p> <p>DEMEULE M ET AL: "HIGH TRANSCYTOSIS OF MELANOTRANSFERRIN (P97) ACROSS THE BLOOD-BRAIN BARRIER"</p> <p>JOURNAL OF NEUROCHEMISTRY, NEW YORK, NY, US, vol. 83, no. 4, November 2002 (2002-11), pages 924-933, XP001188983</p> <p>ISSN: 0022-3042</p> <p>see discussion</p> <p>abstract</p>	<p>1-5, 7-22, 24-39, 41-54, 56-68, 70-78, 80-102</p>
Y	<p>-----</p> <p>SEIDEL G ET AL: "EFFECTS OF TRASYLOL ON THE BLOOD-BRAIN BARRIER IN RATS"</p> <p>NAUNYN-SCHMIEDEBERG'S ARCHIVES OF PHARMACOLOGY, SPRINGER, BERLIN, DE, vol. 284, no. 4, 1974, page R73, XP008030270</p> <p>ISSN: 0028-1298</p> <p>abstract</p>	<p>1-5, 7-22, 24-39, 41-54, 56-68, 70-78, 80-102</p>
Y	<p>-----</p> <p>MARTEL ET AL: "Transport of apolipoproteins E and J at the blood - brain barrier. Relevance to Alzheimer's disease"</p> <p>STP PHARMA SCIENCES, PARIS, FR, vol. 7, no. 1, 1997, pages 28-36, XP002090769</p> <p>ISSN: 1157-1489</p> <p>abstract</p>	<p>1-5, 7-22, 24-39, 41-54, 56-68, 70-78, 80-102</p>
P,X	<p>-----</p> <p>WO 03/009815 A (KENNARD MALCOLM L ;YANG JOSEPH (CA); DEMEULE MICHEL (CA); BELIVEAU) 6 February 2003 (2003-02-06)</p> <p>page 4; figure 17</p> <p>page 37, line 8; claims 8,25</p> <p>-----</p> <p>-/--</p>	<p>1-5, 7-22, 24-39, 41-54, 56-68, 70-78, 80-102</p>

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## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	<p>WO 02/33090 A (PROCYON BIOPHARMA INC) 25 April 2002 (2002-04-25)</p> <p>page 1, lines 42,43; claims 12,22,36,46,52,58,75,82,88; example 18</p> <p>-----</p>	<p>1-5, 7-22, 24-39, 41-54, 56-68, 70-78, 80-102</p>
A	<p>GUILLOT F L ET AL: "ANGIOTENSIN PEPTIDE REGULATION OF BOVINE BRAIN MICROVESSEL ENDOTHELIAL CELL MONOLAYER PERMEABILITY" JOURNAL OF CARDIOVASCULAR PHARMACOLOGY, NEW YORK, NY, US, vol. 18, no. 2, 1991, pages 212-218, XP008030278 ISSN: 0160-2446 abstract page 217, column 2</p> <p>-----</p>	<p>1-5, 7-22, 24-39, 41-54, 56-68, 70-78, 80-102</p>
P,Y	<p>KOBAYASHI H ET AL: "THE PROTEASE INHIBITOR BIKUNIN, A NOVEL ANTI-METASTATIC AGENT" BIOLOGICAL CHEMISTRY, XX, XX, vol. 384, no. 5, 1 May 2003 (2003-05-01), pages 749-754, XP008030275 ISSN: 1431-6730 abstract; figure 2</p> <p>-----</p>	<p>1-5, 7-22, 24-39, 41-54, 56-68, 70-78, 80-102</p>

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Information on patent family members

International Application No

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Patent document cited in search report		Publication date	Patent family member(s)	Publication date
DE 19953696	A	10-05-2001	DE 19953696 A1	10-05-2001
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WO 03009815	A	06-02-2003	CA 2450073 A1	06-02-2003
			WO 03009815 A2	06-02-2003
			US 2003129186 A1	10-07-2003
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WO 0233090	A	25-04-2002	CA 2321256 A1	16-04-2002
			CA 2355334 A1	16-04-2002
			AU 1369102 A	29-04-2002
			WO 0233090 A2	25-04-2002
			CA 2359650 A1	16-04-2002
			EP 1326981 A2	16-07-2003
			JP 2004510833 T	08-04-2004
			US 2003170220 A1	11-09-2003
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